

## INVENTION TITLE

**Driving Safety Anti-Blind Proximity View e-Mirrors Having Owl's Eye Cameras**

## DESCRIPTION



**[Para 1] Field of the Invention.** This invention relates to form a practical driving safety view e-Mirror device to extent driver's vision to all existing blind spots and rear view etc. that can be potentially a new safety device after airbags.

**[Para 2] The Different.** The key revolutions to make this visual system different from any safety view camera devices, include : the owl's eye cameras with the gripper stand, small light enough and water proof, making possible to surface mount at good spots of a vehicle to obtain better proximity views, no more a single camera fixed at the straight back; the multiple stereo cameras, combining multiple LCD to obtain wide area panoramic view without using wide angle cameras that benefit to obtain large vision size matching to rear mirror reflective image size. Thus to eliminate the shrunk tiny image and lost proximity accuracy problem experienced in common wide angle single rear view camera device. What's more, using the left side, and right side blind spot view cameras, can totally remove the conventional side glass mirrors outside of the vehicle, result to reduce air drag 10 % and maximum 18% to those streamline low profile racing car. Thus fuel consumption can be reduced.

**[Para 3] Background of The Invention .** Countless traffic accidents happened in the past related to insufficient safety views: Backing up at blind rear views then ran over children ; Pull out from parking lot too quick and hit up coming vehicle or side walk people; Quick changing lanes on freeway made hit to a vehicle or motorcycle that came out from side blind spot somewhere suddenly; Tow truck sweep the trailer while changing lane and hit to a small vehicle at its side; Sharp braking on freeway to avoid something at front without seeing other vehicle following too close, then got hit etc. Because drivers " did not see it ! ". Our existing reflective mirrors safety view system could not display dangerous dynamic vision to catch driver's attention. On the other hand, high cost mandatory airbags, nowadays are prior to any driving safety devices. However, airbags never deploy until deadly collision happened, and rescue injure and life lost after. No help to avoid collisions nor to reduce countless traffic accidents causing by driver's "did not see it !" error nationwide every month. It's time to make change and to upgrade the existing driving safety views system.

### **Problems of Driving Safety View in the Real World:**

- A. Existing safety view reflective glass mirrors in every motor vehicle, characterize narrow viewing angles, difficult to reflect both left and right side blind spots ( see drawing 01);
- B. No mirror is mounted in the back to see full rear view, unless using mirror in mirror, which will shrink the rear view to very small to see, or have to make a very large mirror to drag attention;
- C. Mirrors are not able to reflect the proximity view of an approaching vehicle ( or sidewalk people, or other objects ) away from your vehicle;
- D. Mirror can not be mounted more than 6 feet ( the width of a vehicle ) away from the driver, but only driver's front visible field, or image would be too small to view;
- E. Glass mirrors are not flexible to mounts anywhere of the vehicle since it's heavy, large size.

**[Para 4] Problems of Prior Arts of single safety view camera.** What happen if you could only see with a single eye, rather than 2 eyes ? You would missed stereo, missed the depth of field that measure the proximity, missed half of the field and half of your viewing angle. You would be physically half blind vision. So do single cameras view system is so called half blind safety view system.

**[Para 5] Problems of Prior Arts other safety view camera system.** They legacy generic video cameras or low cost CMOS web cam are used. However, safety view video quality is so poor, blur, no dark or night visibility without disturbing LED lights. The most critical error is the shrunk tiny high distortion video image, totally mismatch to existing rear view glass mirrors. Drivers will be confused, can not estimate the object proximity accordingly. Small tiny video image can't catch driver's attention on it. Plus, camera over size, mount bracket design, and mount location to fit all type of motor vehicle, are still technical barriers, far not be able to resolve by using conventional optoelectronic products. These are some of reasons why, non of existing safety view devices come to a mature standard like airbag to be a legal device. Besides, contrast to many theoretical safety view prior arts, this article pin points detail solutions to manufacture a practical safety view device.

#### **[Para 6] BRIEF DESCRIPTION OF THE DRAWINGS**

- 01 The Optoelectronic Visual System.
- 02 The Owl's Eye Camera Assembly.
- 03 LCD Panels, Holders, and The Panoramic e-Mirror.
- 04 Micro Cameras Rear Diagonal Proximity Views Technique.
- 05 The Cost Effective Setting Pattern.
- 06 The Pro Setting Video Circuit Connection Pattern.